WHAT IS CLAIMED IS:

1. A device for sensing a concentration of a combustible specie of interest, the device including:

a holder;

a first RTD disposed in a first cover, wherein the first cover is mounted to the holder;

a second RTD disposed in a second cover, wherein the second cover is mounted to the holder; and

wherein the first cover has a higher catalytic activity to the specie of interest than the second cover.

2. The device of claim 1 wherein the first cover is formed from a tube.

3. The device of claim 1 wherein the second cover is formed as a tube.

4. The device of claim 1 wherein the first cover has a catalyst film disposed thereon.

5. The device of claim 4 wherein the film is metal.

6. The device of claim 5 wherein the metal is platinum.

7. The device of claim 4 wherein the film is a metal oxide.

8. The device of claim 4 wherein the film is a perovskite.

9. The device of claim 4 wherein the film is hopcalite.

10. The device of claim 1 wherein the second cover is constructed from a catalyst-free stainless steel tube.

11. The device of claim 1 wherein at least one of the first and second cover is joined to the holder using thermally insulative material.

12. The device of claim 11 wherein the thermally insulative material is selected from the group of ceramic cement, adhesive, and high-temperature epoxy.

13. A device for determining a concentration of a combustible specie of interest in an exhaust stream, the device including:

a solid electrolyte;

a reference electrode that is inactive to the combustion reaction; and

a working electrode that is catalytically active to the combustion reaction and wherein the working electrode and the reference electrode are coupled to the solid electrolyte.

14. The device of claim 13 wherein the reference and working electrodes are couplable to the exhaust stream.

15. The device of claim 13 wherein the solid electrolyte is selected from the group consisting of doped zirconia, ceria, and bismuth oxide.

16. The device of claim 13 wherein the reference electrode is constructed from gold.

17. The device of claim 13 wherein the reference electrode is constructed from doped lanthanoid chromite.

18. The device of claim 13 wherein the working electrode is constructed from platinum.

19. The device of claim 13 wherein the working electrode is constructed from a metal oxide.

20. The device of claim 19 wherein the electrode film is constructed using doped ceria.

21. The device of claim 19 wherein the electrode film is constructed using doped lanthanum manganite.

22. The device of claim 19 wherein the electrode film is constructed using a perovskite.

23. A solid state device for determining the concentration of oxygen in a gas phase, the device comprising:

a solid electrolyte;

a reference electrode coupled to the solid electrolyte; and

a working electrode constructed from a mixed ion/electron conducting oxide, wherein the working electrode is coupled to the solid electrolyte.

24. The device of claim 23 wherein the solid electrolyte is selected from the group consisting of doped zirconia and ceria.

25. The device of claim 23 wherein the reference electrode is constructed from the group consisting of platinum, a metal oxide electrode, and a mixed conducting electrode.

26. The device of claim 25 wherein the metal oxide electrode includes perovskite structure.

27. The device of claim 25 wherein the metal oxide electrode includes oxide with fluorite structure.

28. The device of claim 23 wherein the working electrode is constructed from ceria or its solid solution doped with at least one mixed valency element.

29. The device of claim 28 wherein the mixed valency element is one of terbium and praseodymium.

30. The device of claim 23 wherein the working electrode is constructed from a solid solution of ceria doped with at least on mixed valency element.

31. The device of claim 30 wherein the mixed valency element is one of terbium and praseodymium.

32. A process analytic system comprising:

a sample probe having at least one sulfur-resistant sensor disposed therein;

a controller coupled to the sample probe to measure a parameter of an exhaust stream; and

a blowback system coupled to the sample probe and the controller to responsively reverse gas flow through the sample probe.

33. The system of claim 32, wherein the sample probe includes a plurality of sulfur-resistant sensors.

34. The system of claim 32, wherein the sensor is an oxygen sensor.

35. The system of claim 32, wherein the sensor is a combustibles sensor.

36. The system of claim 32, wherein the sample probe includes a particulate filtering enclosure.